

## ABSTRACT

The present invention provides eukaryotic double-stranded RNA (dsRNA) expression vectors containing two promoters directed head-to-head with a  
5 designated intervening sequence of interest that is effective in eukaryotic cells containing the dsRNA expression vector, and a vaccine using an attenuated eukaryotic pathogenic cell. The present invention also provides methods of vaccinating against colonization or infection of a eukaryotic pathogen. The present invention further provides methods of generating double-stranded RNA (dsRNA)  
10 and screening designated nucleic acids capable of inhibiting expression of an essential eukaryotic gene.

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